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SHALLOW SEISMIC REFLECTION INVESTIGATIONS OF THE BIG CREEK FAULT ZONE AND ITS EXTENSION INTO THE MEMPHIS, TENNESSEE, AREA: COLLABORATIVE WITH MILLSAPS COLLEGE, JACKSON, MS.

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Abstract

The goal of this project was to provide seismic data to better understand the trend and characteristics of the Big Creek Fault Zone as it approaches the Mississippi River near Helena, Arkansas. A secondary goal of the project was to also acquire seismic profiles up the Wolf River within Memphis, Tennessee, in hopes of intersecting the Big Creek Fault should it continue on its trend toward Memphis. The seismic profiling of the Mississippi River has not proved successful and little useful data has been obtained. The secondary goal of profiling the Wolf River has produced data that suggests a fault zone with small scale offset, is present near its confluence with the Mississippi River. This fault zone may represent a poorly constrained northeast trending fault mapped by Kingsbury and Parks (1993), if so, then relocating the fault eastward of its approximately mapped location would place a fault within the highly urbanized Memphis area.